No. 2022-1228

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PANDUIT CORP., FS.COM INC., THE SIEMON COMPANY,
Appellants,

v.

INTERNATIONAL TRADE COMMISSION,
Appellee,

CORNING OPTICAL COMMUNICATIONS LLC,
Intervenor.

Appeal from the United States International Trade Commission
Investigation No. 337-TA-1194

BRIEF FOR INTERVENOR CORNING OPTICAL COMMUNICATIONS LLC

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June 24, 2022

THE LANGUAGE OF THE PATENT CLAIMS AT ISSUE

Claims 1 and 3 of U.S Patent No. 9,020,320 (the "'320 patent") provide:

1. A fiber optic apparatus, comprising:

a chassis; and

a fiber optic connection equipment provided in the chassis;

the fiber optic connection equipment configured to support a fiber optic connection density of at least ninety-eight (98) fiber optic connections per U space, based on using at least one simplex fiber optic component or at least one duplex fiber optic component.

3. The fiber optic apparatus of claim **1**, wherein the fiber optic connection equipment is configured to support a fiber optic connection density of at least one hundred forty-four (144) fiber optic connections per U space.

Claim 11, 14, and 19 of U.S. Patent No. 10,444,456 (the "'456 patent") provide:

11. A fiber optic apparatus, comprising:

a chassis configured to be disposed in an equipment rack, the chassis comprising front and rear ends that are spaced apart from one another in a longitudinal direction, and comprising opposite first and second ends that are spaced apart from one another in a lateral direction that extends crosswise to the longitudinal direction;

a plurality of fiber optic equipment trays supported by the chassis and extendable relative to the chassis in the longitudinal direction; and

a plurality of fiber optic modules configured to be installed in the plurality of fiber optic equipment trays, wherein each fiber optic module of the plurality of fiber optic modules comprises a front side, a rear side, an internal chamber, a plurality of first fiber optic adapters disposed through the front side, at least one second fiber optic adapter disposed through the rear side, and a plurality of optical fibers disposed within the internal chamber and extending from the at least one second fiber optic adapter to the plurality of first fiber optic adapters;

wherein each fiber optic equipment tray of the plurality of fiber optic equipment trays is configured to receive multiple fiber optic modules of the plurality of fiber optic modules;

wherein the plurality of fiber optic equipment trays and the plurality of fiber optic modules are configured to support a fiber optic connection density of at least ninety-eight (98) fiber optic connections per U space of the chassis, based on using a simplex fiber optic adapter or a duplex fiber optic adapter as each fiber optic adapter of the plurality of first fiber optic adapters; and

wherein a U space comprises a height of 1.75 inches and comprises a width of 19 inches or 23 inches.

14. The fiber optic apparatus of claim **11**, wherein for each fiber optic module of the plurality of fiber optic modules, each fiber optic adapter of the plurality of first fiber optic adapters comprises a simplex LC fiber optic adapter or a duplex LC fiber optic adapter, and wherein the at least one second fiber optic adapter comprises at least one multi-fiber push-on (MPO) fiber optic adapter.

18. The fiber optic apparatus of claim **11**, wherein the chassis is sized for more than one U space.

19. The fiber optic apparatus of claim **18**, wherein the plurality of fiber optic equipment trays and the plurality of fiber optic modules are configured to support a fiber optic connection density of one hundred forty-four (144) fiber optic connections per U space of the chassis, based on using a simplex fiber optic adapter or a duplex fiber optic adapter as each fiber optic adapter of the plurality of first fiber optic adapters.

Claim 1 of U.S. Patent No. 10,120,153 (the "'153 patent"), from which claims 9 and 16 depend, provides:

1. A fiber optic apparatus, comprising:

a chassis configured to be disposed in an equipment rack, the chassis comprising opposite front and rear ends that are spaced apart from one another in a longitudinal direction, and comprising opposite first and second ends that are spaced apart from one another in a lateral direction that extends crosswise to the longitudinal direction;

a guide system configured to be disposed within the chassis;

at least one fiber optic equipment tray configured to slidably engage within the guide system, the at least one fiber optic equipment tray comprising a front end with at least one fiber optic routing element that comprises successive material sections extending frontward, upward, and rearward, respectively, to permit optical fibers to be routed to either left or right portions of the at least one fiber optic equipment tray toward the first and second ends of the chassis; and

a plurality of fiber optic modules configured to be received by the at least one fiber optic equipment tray, wherein each fiber optic module of the plurality of fiber optic modules is independently movable in the longitudinal direction relative to the at least one fiber optic equipment tray, and wherein each fiber optic module of the plurality of fiber optic modules comprises a front end, a rear end, an interior, a plurality of first fiber optic adapters disposed through the front end, at least one second fiber optic adapter disposed through the rear end, and at least one optical fiber disposed within the interior and establishing at least one optical connection between the at least one second fiber optic adapter and at least one first fiber optic adapter of the plurality of first fiber optic adapters.

Claim 14 of U.S. Patent No. 8,712,206 (the "'206 patent"), from which claims 22 and 23 depend, provides:

14. A fiber optic module, comprising:

a main body defining an internal chamber disposed between a front side and a rear side;

a plurality of optical fibers disposed in the internal chamber;

a front opening disposed along a longitudinal axis in the front side;

a first plurality of fiber optic components optically connected to the plurality of optical fibers, the first plurality of fiber optic components disposed through the front opening providing a fiber optic connection density of at least one fiber optic connection per 7.0 millimeters (mm) of width of the front opening; and

at least one second fiber optic component optically connected to at least one of the plurality of optical fibers to provide optical connection between the at least one second fiber optic component and at least one of the first plurality of fiber optic components.

22. The fiber optic module of claim **14**, further comprising at least one rail disposed on the main body.

23. The fiber optic module of claim **22**, further comprising at least one latch attached to the at least one rail and configured to engage the at least one rail.

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

CERTIFICATE OF INTEREST

Case Number 2022-1228

Short Case Caption Panduit Corp. v. ITC

Filing Party/Entity Corning Optical Communications

Instructions: Complete each section of the form. In answering items 2 and 3, be specific as to which represented entities the answers apply; lack of specificity may result in non-compliance. **Please enter only one item per box; attach additional pages as needed and check the relevant box**. Counsel must immediately file an amended Certificate of Interest if information changes. Fed. Cir. R. 47.4(b).

I certify the following information and any attached sheets are accurate and complete to the best of my knowledge.

Date: 06/24/2022

Signature: /s/ John Thorne

Name: John Thorne

1. Represented Entities. Fed. Cir. R. 47.4(a)(1).	**2. Real Party in Interest.** Fed. Cir. R. 47.4(a)(2).	**3. Parent Corporations and Stockholders.** Fed. Cir. R. 47.4(a)(3).
Provide the full names of all entities represented by undersigned counsel in this case.	Provide the full names of all real parties in interest for the entities. Do not list the real parties if they are the same as the entities. ☑ None/Not Applicable	Provide the full names of all parent corporations for the entities and all publicly held companies that own 10% or more stock in the entities. ☐ None/Not Applicable
Corning Optical Communications LLC		Corning Incorporated

☐ Additional pages attached

4. Legal Representatives. List all law firms, partners, and associates that (a) appeared for the entities in the originating court or agency or (b) are expected to appear in this court for the entities. Do not include those who have already entered an appearance in this court. Fed. Cir. R. 47.4(a)(4).

☐ None/Not Applicable ☑ Additional pages attached

See attached.		

5. Related Cases. Provide the case titles and numbers of any case known to be pending in this court or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal. Do not include the originating case number(s) for this case. Fed. Cir. R. 47.4(a)(5). See also Fed. Cir. R. 47.5(b).

☐ None/Not Applicable ☐ Additional pages attached

Corning Optical Commc'ns LLC v. Panduit Corp., 1:16-cv-00268 (D. Del.)	Panduit Corp. v. Corning Optical Commc'ns LLC, IPR2022-00743 (P.T.A.B.)	
Corning Optical Commc'ns LLC v. Leviton Mfg. Co., 1:21-cv-01185 (D. Del.)		
Panduit Corp. v. Corning Optical Commc'ns LLC, IPR2021-01562 (P.T.A.B.)		

6. Organizational Victims and Bankruptcy Cases. Provide any information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees). Fed. Cir. R. 47.4(a)(6).

☑ None/Not Applicable ☐ Additional pages attached

ATTACHMENT TO CERTIFICATE OF INTEREST

4. Legal Representatives.

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STATEMENT OF RELATED CASES

Pursuant to Federal Circuit Rule 47.5, counsel for Corning Optical Communications LLC states that the following cases are pending that will directly affect or be effected by this Court's decision in the pending appeal:

1. *Corning Optical Communications LLC v. Panduit Corp.*, No. 1:16-cv-00268 (D. Del.);
2. *Corning Optical Communications LLC v. Leviton Manufacturing Co.*, No. 1:21-cv-01185 (D. Del.);
3. *Panduit Corp. v. Corning Optical Communications LLC*, IPR2021-01562 (P.T.A.B.);
4. *Panduit Corp. v. Corning Optical Communications LLC*, IPR2022-00743 (P.T.A.B.).

INTRODUCTION

The data centers that run the Internet connect row after row of computers using spool after spool of optical fiber. Connecting and routing that fiber is a massive undertaking. Data center real estate is expensive, as is the time of the technicians who set up and maintain data centers. Accordingly, the companies that run data centers demand fiber optic connection equipment that achieves three goals: to support many connections in a small space (density); to help technicians easily install, upgrade, and modify equipment (accessibility); and to protect delicate optical fibers from damage (fiber protection).

The leading manufacturer of high-density fiber optic connection equipment is Intervenor Corning Optical Communications LLC ("Corning") – a subsidiary of Corning Incorporated, whose scientists invented low-loss optical fiber in 1970. In 2009, after years of research and development, Corning launched a new system it called Evolved-Density, Growth-Enabled ("EDGE"), that met the goals of density, accessibility, and fiber protection better than any other product on the market.

EDGE allows data centers to make one-and-a-half times as many fiber optic connections in a standard rack unit space as anything that preceded it, while still allowing easy access and protecting fibers. It achieves those benefits by using an innovative system that includes a chassis that holds sliding trays with special guides for routing fiber. The trays accept modules that can be inserted into the

trays from the front or from the rear. The chassis and the modules work together to achieve EDGE's unprecedented density, accessibility, and fiber protection.

Corning has obtained several patents covering the EDGE system's new features. It is no longer contested on appeal that those patents are novel and nonobvious. Many competing makers of fiber optic connection equipment – including Appellants Panduit Corp. ("Panduit"), FS.com Inc. ("FS"), and The Siemon Company ("Siemon") – have developed and launched new products that mirror EDGE's density, accessibility, and fiber protection using similar designs that incorporate some or all of EDGE's patented features.

In February 2020, Corning filed a Section 337 complaint with the U.S. International Trade Commission ("Commission") alleging that a group of respondents including Panduit, FS, and Siemon made chassis, modules, or both outside the United States and imported them into the United States, where they showed their customers how to combine them and use them to infringe Corning's patents. The Commission instituted an investigation into such unfair trade practices. On August 23, 2021, relying on a record that includes a four-day evidentiary hearing and a comprehensive initial determination by its administrative law judge, the Commission found that Panduit, FS, and Siemon had indeed violated Section 337, and issued both a general exclusion order and cease-and-desist orders against Panduit and FS to halt their unlawful conduct.

The Commission's rulings were legally correct and supported by substantial evidence. Appellants' first argument, a challenge to the Commission's Section 337 enforcement authority, is foreclosed by *Suprema, Inc. v. International Trade Comm'n*, 796 F.3d 1338 (Fed Cir. 2015) (en banc), and by *Comcast Corp. v. International Trade Comm'n*, 951 F.3d 1301 (Fed. Cir. 2020). Their attempts to distinguish those cases or to show that the Commission unreasonably exercised its authority are without substance. Their second argument is an enablement challenge to a subset of Corning's patent claims that fails on the undisputed legal standard and well-developed factual record. Their remaining arguments are infringement disputes that mischaracterize the Commission's decision and fail to engage the agency's reasoning. This Court should affirm the Commission's well-reasoned and persuasive decision.

COUNTERSTATEMENT OF THE ISSUES

1. Whether substantial evidence supports the Commission's determination that Panduit and Siemon violated 19 U.S.C. § 1337 by importing modules that infringe Corning's patents when combined with chassis that Panduit and Siemon make domestically; and by inducing their customers to infringe those patents by combining chassis and modules.

2. Whether substantial evidence supports the Commission's determination that Appellants failed to show by clear and convincing evidence that

claims 1 and 3 of U.S. Patent No. 9,020,320, and claim 11 of U.S. Patent No. 10,444,456, are invalid for lack of enablement.

3. Whether substantial evidence supports the Commission's determination that Panduit and Siemon failed to establish a prosecution history disclaimer limiting the scope of the "fiber routing element" recited by claims 1 and 23 of U.S. Patent No. 10,120,153.

4. Whether substantial evidence supports the Commission's determination that the "front opening" recited by claim 14 of U.S. Patent No. 8,712,206 may include dividers or spacers.

COUNTERSTATEMENT OF THE CASE

I. Factual Background

A. Corning's EDGE System

Corning's EDGE system, launched in 2009 and still a market leader today, is a major advance in fiber optic connection equipment. EDGE and the competing products made by Appellants are systems for making fiber optic connections in data centers. Data centers are large, expensive facilities that cost money per square foot to build and maintain. Appx28268-28269. They are installed and staffed by technicians whose time is also costly. Appx66-67. A data center's revenue depends on the amount of data it can process, and the amount of data a center can process depends on the number of fiber optic connections it can make. Appx204-206. In addition, although typically carried within cables, optical fibers remain

delicate: they are easily broken or damaged, and if bent too much they perform poorly. Appx28269. Data centers generate strong demand for fiber optic connection equipment that can make dense connections in a small space, Appx28269; that technicians can quickly install, maintain, and modify, Appx268; and that protects fibers from damage, including excessive bending, Appx12.

Industry participants measure the density of fiber optic connection equipment by the number of connections it supports in a single Rack Unit space, also known as a "U space." Appx9. A U space is a standardized measurement: 1.75 inches high and 19 or 23 inches wide. Appx9. It is sometimes abbreviated as "1U" or "1RU." Appx9. Larger equipment may take up some multiple of a U space, such as 2 U spaces ("2U" or "2RU"), adding up to 3.5 inches high; 4 U spaces ("4U or "4RU"), adding up to 7 inches high. Before EDGE, Corning and many competitors sold equipment that supported 72 fiber optic connections per U space; a few supported 96. Appx269. EDGE supports 144 fiber optic connections per U space, 50% more than the densest prior art. Appx270. At the evidentiary hearing, more than 10 years later, there was no evidence of any product that could achieve higher density. Appx269-274. EDGE achieves unprecedented density, moreover, without sacrificing accessibility or fiber protection. Appx268-269.

The EDGE system has two main components, as do the infringing systems developed by Appellants. One main component is the chassis: an enclosure that

fits into a certain number of U spaces (*e.g.*, 1U, 2U, 4U) in a data center rack. Appx13. An EDGE chassis contains three sliding trays per U space, each of which accommodates multiple modules. Appx28477. Each tray has specially designed fiber routing elements that guide fiber connected to the front of the module without bending it too tightly. Appx28271. The other main component is the module: a smaller enclosure that itself contains and protects the optical fibers. Appx28600. Modules can be inserted from either the front or the rear, which saves technicians the time of walking around an entire row of equipment. Appx268; Appx28269. EDGE's modular structure also provides scalability: customers can buy an EDGE chassis and some EDGE modules, but need not fill each chassis at the time of initial purchase. Appx28269.

EDGE's innovative features made it a remarkable, much-imitated success. It exceeded Corning's own targets for density and for reduced installation time, Appx28635; exceeded Corning's sales targets while still selling at a 15% price premium over Corning's previous solution, Appx272; Appx28635-28636; and became the leading solution in its category, helping Corning claim a commanding 52% market share of the U.S. data center market, Appx272-273; Appx518; Appx28605. It won praise from Corning's customers, Appx518; Appx28635-28636, and enabled Corning to win industry awards in 2013, 2014, and 2016, Appx518; Appx28636; Appx52168. Most tellingly, although EDGE's architecture

was unique when it launched, Corning's rivals (including Appellants) and a host of smaller foreign copyists have used the same architecture in their competing products. Appx28607-28611. Using the same techniques as EDGE, each equaled – but none exceeded – EDGE's density of 144 fiber optic connections per U space.

Corning has invested and continues to invest millions of dollars in the design, development, and improvement of its EDGE products. For example, from 2008 to February 2020, Corning invested $10.1 million in domestic engineering, research, and development in its EDGE products. Appx61. In the underlying investigation, Corning presented, and the Commission accepted, evidence allocating $7.6 million of that amount specifically to chassis and modules that practice the Asserted Patents described below – as opposed to cable assemblies that increase Corning's revenues from EDGE sales but do not themselves practice the Asserted Patents. Appx62.

B. The Asserted Patents

Corning protected its investment in EDGE with several families of patents. In the underlying investigation, Corning originally asserted five related patents, of which four (the "Asserted Patents") remain. The Asserted Patents are U.S. Patent No. 9,020,320 (the "'320 patent"); U.S. Patent No. 10,444,456 (the "'456 patent"); U.S. Patent No. 10,120,153 (the "'153 patent"); and U.S. Patent No. 8,712,206 (the "'206 patent"). The '320 and '456 patents share a specification. The '153 patent

is in the same family as the ’320 and ’456 patents. The ’206 patent, which specifically covers modules, is from a different family, but shares 25 figures with the ’320 and ’456 patents.

1. The ’320 patent. The ’320 patent is entitled “High Density and Bandwidth Fiber Optic Apparatuses and Related Equipment and Methods.” Appx561. It issued on April 28, 2015, with a priority date of August 29, 2008. Appx286; Appx561. It claims EDGE’s innovation of fiber optic connection equipment configured to support unprecedented fiber optic connection density per U space. It requires that this density be achieved with a chassis, fiber optic equipment provided in that chassis, and specific types of fiber optic components (simplex and duplex).[1] Independent claim 1 recites a chassis containing fiber optic connection equipment configured to support at least 98 connections per U space

[1] Fiber optic components include connectors and adapters. A simplex connector has a single ferrule with one fiber. Appx149. It traditionally supports one-way communication (send *or* receive). Appx28265-28266. A duplex connector physically combines two simplex connectors; it consists of two ferrules, with one fiber each, joined so that two fibers can connect simultaneously. It traditionally supports two-way communication (send *and* receive). Appx28265. Simplex adapters receive simplex connectors, and duplex adapters can receive one duplex connector or two simplex connectors. Appx149. EDGE and Appellants’ Accused Products use standard simplex and duplex components of the “LC” type. The Asserted Patents disclose the use of LC connectors and adapters, but most Asserted Claims are not limited to LC components.

using simplex or duplex fiber optic components, and dependent claim 3 recites that the equipment is configured to support at least 144 connections per U space.

In 2016, Panduit unsuccessfully attempted to invalidate the ’320 patent in an *inter partes* review. The Patent Trial and Appeal Board instituted review and found Panduit had failed to show that the ’320 patent was anticipated or obvious. Appx85052. This Court summarily affirmed. *See Panduit Corp. v. Corning Optical Commc’ns LLC*, 774 F. App’x 682 (Fed. Cir. 2019) (per curiam). In 2021, after the Commission issued its orders under review, FS again unsuccessfully attempted to invalidate the ’320 patent. *See* Order Denying Request for *Ex Parte* Reexamination, Application No. 90/019,020 (Nov. 15, 2021).

2. The ’456 patent. The ’456 patent is likewise entitled “High Density and Bandwidth Fiber Optic Apparatuses and Related Equipment and Methods.” Appx788. It issued on October 15, 2019, with a priority date of August 29, 2008. Appx349; Appx789. The ’456 patent claims the same 144-per-U-space density as the ’320 patent, plus structural features that achieve this density while providing efficient, secure access to the fibers and scalable growth. Independent claim 11 recites the use of multiple trays and modules to achieve the claimed density. Dependent claim 12 adds a second density requirement for each individual module: that adapters be disposed through at least 85% of the width of the front side. Dependent claim 14 requires modules with an LC adapter in the front and a

specific type of multi-fiber adapter (MPO) in the rear.[2] Dependent claim 15 recites trays that receive modules aligned in a row. Dependent claim 16 recites modules configured to be locked in the tray. Dependent claim 19 recites equipment configured to achieve exactly 144 connections per U space using simplex/duplex adapters. Dependent claim 21 recites module guides with locking features. Independent claim 27 and dependent claim 28 have similar limitations to claims 11 and 12, respectively, but recite a 4U chassis.

In 2021, after the Commission issued its orders under review, Panduit, Siemon, and FS unsuccessfully attempted to invalidate the '456 patent in an *inter partes* review. The Patent Trial and Appeal Board declined to institute review. *Panduit Corp. v. Corning Optical Commc'ns LLC*, No. IPR2021-01562, Paper 20 (P.T.A.B. Apr. 6, 2022).

3. The '153 patent. The '153 patent is entitled "Independently Translatable Modules and Fiber Optic Equipment Trays in Fiber Optic Equipment." Appx664. It was issued on November 6, 2018, with a priority date of

[2] Multi-fiber components have more than one fiber per ferrule – typically, 12 or more. Appx28266. One of the most valuable uses of high-density fiber optic connection equipment like EDGE and Appellants' products features many simplex/duplex fiber optic cables (often called "jumper cables") on the equipment's front end, and fewer multifiber cables (often called "trunks") on its back. Appx40-41. The jumper cables make short-distance connections to nearby equipment; the trunks, longer-distance connections to more distant equipment.

August 29, 2008. Appx665; Appx95801. The '153 patent does not contain a density limitation, but claims EDGE's innovative features that enable high density without compromising access and security: sliding fiber optic equipment trays that permit modules to be individually inserted and released from the front and rear, and integrated fiber optic routing guides to route fibers from the tray front to the chassis sides. Dependent claim 9 recites modules insertable and removable from the front or rear. Dependent claims 16 and 26 recite a module locking latch that prevents accidental removal from the rear. Independent claim 23 and its dependent claims recite similar features together with modules that have lower-density adapters in the front than in the rear.

In 2022, after the Commission issued its orders under review, Panduit filed a complaint seeking *inter partes* review of the '153 patent. The Patent Trial and Appeal Board has not yet either instituted or declined to institute review.

4. The '206 patent. The '206 patent is entitled "High-Density Fiber Optic Modules and Module Housings and Related Equipment." Appx614. It was issued on April 29, 2014, with a priority date of June 19, 2009. Appx614. The '206 patent claims the structure of EDGE's modules, including designs to pack simplex/duplex components tightly (but securely) within each individual module. Combining dense modules with the ability to support a certain number of modules in a 1U space permits the unprecedented density recited in the '320 and '456

patents, while preserving accessibility. Independent claim 14 recites a fiber optic module with an internal chamber housing optical fibers connecting front and rear components, a front opening on the module's front side, and a plurality of fiber optic components disposed through the front opening providing at least one connection per 7.0 mm of the front opening.[3] Appx660. Dependent claims 22 and 23 claim additional elements of the module that make it usable in a chassis with sliding trays – a rail and a latch, respectively. *See* Appx661; Appx28468.

In 2017, Panduit unsuccessfully attempted to invalidate the '206 patent in an *inter partes* review. The Patent Trial and Appeal Board declined to institute review. Appx101610-101637.

II. Procedural History

A. Corning's Complaint and the Evidentiary Hearing

On February 21, 2020, Corning filed a complaint with the International Trade Commission alleging a violation of Section 337 of the Tariff Act of 1930, as amended, based on importation into the United States, sale for importation, and/or sale within the United States after importation of certain high-density fiber optic equipment and components thereof that infringe one or more of the '320, '456,

[3] Claim 14 is not asserted, but remains relevant because asserted claims 22 and 23 depend from it and incorporate its limitations.

'153, and '206 patents, as well as U.S. Patent No. 10,094,996 (the "'996 patent"). The Commission instituted an Investigation on March 19, 2020. Appx1104.

Corning's complaint named 13 respondents. Of those, five participated in the Investigation. Corning withdrew its allegations against one original respondent; one elected to default; three were found in default after failing to respond; and two settled. Appx4-5.

Corning originally asserted 52 claims from five patents. It later narrowed its allegations to assert 17 claims of four patents, dropping all claims of the '996 patent. Appx112-114; Appx116-118.

Two respondents sought summary determination before the hearing. Both motions were denied. Appx10665; Appx15897.

The evidentiary hearing took place from October 21 to 26, 2020. It involved live testimony from numerous fact witnesses from both Corning and respondents, including inventors of EDGE and the Asserted Patents, as well as testimony from multiple experts on both sides.

B. The ALJ's Initial Determination

On March 23, 2021, the administrative law judge ("ALJ") issued a final initial determination ("ID"), finding a violation of Section 337 with respect to claims 1 and 3 of the '320 patent; claims 11, 12, 14-16, 19, 21, 27, and 28 of the

’456 patent; claims 9, 16, 23, and 26 of the ’153 patent; and claims 22 and 23 of the ’206 patent (the “Asserted Claims”). Appx524.

The ALJ found all respondents to infringe one or more Asserted Claims. Appx524. He found that Corning’s Asserted Patents and Claims were valid. Appx524. He rejected respondents’ claims that prior art anticipated the Asserted Patents or rendered them obvious. Appx236-237, Appx240, Appx247, Appx256, Appx266. He also rejected other invalidity claims, including an enablement challenge. Appx280-289.

The ALJ found that each respondent imports either chassis or modules (or both) that directly infringe or are used to induce infringement by end customers. Appx524. He found that Corning has a substantial domestic industry based on its EDGE products, which practice claims of the asserted patents. Appx524.

The ALJ issued a Recommended Determination on Remedy and Bonding (“RD”). Appx525-556. He recommended to the Commission that, if it found a violation of Section 337, it should issue a general exclusion order and cease-and-desist orders. Appx533, Appx553.

On April 5, 2021, OUII and respondent Leviton each filed a petition for review of the ID. Appx22790; Appx22815. Respondents FS, Panduit, Wirewerks, and Siemon also filed a joint petition for review. Appx22879. On April 13, 2021,

OUII, Leviton, and Corning responded to the petitions. Appx23116; Appx23096; Appx22978.

C. The Commission's Opinion

On May 24, 2021, the Commission determined to review the ID in part. It asked for briefing on issues concerning importation and infringement, as well as other issues regarding remedy and the public interest. It declined to review the ALJ's validity findings. Appx24094.

On August 3, 2021, the Commission found a violation of Section 337 as to all 17 claims Corning asserted. Appx16-17. It modified some of the ID's findings. Most relevant here, it affirmed with modifications the ID's finding that the imported article(s) of Appellants Panduit, Siemon, and FS are respectively used, at their inducement, by their customers, to directly infringe the Asserted Claims of the '320, '456, and '153 patents. Appx16.

As remedies, the Commission issued: (1) a general exclusion order prohibiting the entry of infringing high-density fiber optic equipment and components thereof; and (2) cease-and-desist orders directed to Appellants Panduit and FS. Appx97. It determined that the public interest did not preclude issuance of those orders. Appx97. It issued its orders on August 3, 2021, and they went into effect on October 4, 2021. Appx97.

This appeal followed.

SUMMARY OF ARGUMENT

I.A. The Commission has enforcement authority under Section 337 to prevent importation of articles that the importer later uses to induce infringement of a valid U.S. patent. The en banc decision in *Suprema* and the panel decision in *Comcast* both recognize that broad authority.

B. The Commission reasonably exercised its authority to find that Panduit and Siemon violated Section 337. The record showed in detail that those Appellants designed, imported, and sold their modules to provide end-user customers with the benefits of Corning's patented invention. They then instructed and encouraged their customers to combine the imported modules with chassis, infringing Corning's patents. Preventing that conduct is in the heartland of the authority recognized in *Suprema* and *Comcast*.

C. Panduit and Siemon cannot distinguish *Suprema* and *Comcast*. Some of their arguments proffer no distinctions at all and are improper requests to overrule governing Circuit authority. Others proffer irrelevant distinctions. For example, Panduit and Siemon contend that *Suprema* involved a method claim, while this case (like *Comcast*) involves an apparatus claim, but fail to show why that should matter. Panduit and Siemon also fault the Commission for not applying a "nexus" test to determine whether they violated Section 337. They do

not contend that the statutory language requires a nexus test, and fail to show that the Commission acted unreasonably in declining to apply one.

II.A. Substantial evidence supports the Commission's finding that Appellants failed to show, by clear and convincing evidence, that certain claims of the '320 and '456 patents are not enabled. The challenged claims recite open-ended ranges including densities of "at least 98" or "at least 144" fiber optic connections per U space. Open-ended ranges are valid where an inherent limit would be apparent to a person of skill and the patent enables a person of skill to approach that limit. The record shows that a person of skill would know that there is an inherent limit on the number of fiber optic connections per U space. Factors that create that limit include the physical structure to support fiber optic connections; technicians' need to access the connections; and the need to protect delicate fibers from damage or excessive bending.

B. Although Corning did not bear the burden to show enablement, it submitted expert and fact witness testimony to show that its patents enabled a person of skill to approach the inherent limit based on the state of the art in 2008. The Commission reasonably credited that testimony.

C. Appellants, who bore the burden to show lack of enablement, failed to meet it. They ignore the Commission's factual findings, to which this Court should defer. Their contentions rely on post-priority-date evidence – principally,

new adapters unveiled in 2019 – which the Commission correctly declined to consider. Even if they could use such evidence, Appellants still fail to show that combining the new adapters with EDGE would require undue experimentation.

III. Substantial evidence supports the Commission's finding that Panduit's and Siemon's products include the "fiber routing element" required by the Asserted Claims of the '153 patent. Panduit's and Siemon's contrary position relies on a prosecution-history disclaimer argument, but they can point to no clear disavowal of claim scope. Panduit and Siemon also mischaracterize the ALJ's opinion (which the Commission adopted) as agreeing with their position. In fact, he properly rejected it.

IV. Substantial evidence supports the Commission's finding that Siemon's and FS's modules have "a front opening" as required by the Asserted Claims of the '206 patent. A person of skill would interpret that phrase as including front openings with dividers or spacers, which Corning's, Siemon's, and FS's modules all have. Siemon's and FS's contrary position relies on a tenuous claim differentiation argument that the Commission properly rejected.

ARGUMENT

Standards of Review

This Court reviews "Commission findings and conclusions" to determine whether they are supported by "substantial evidence." *Tandon Corp. v. Int'l Trade*

Comm'n, 831 F.2d 1017, 1019 (Fed. Cir. 1987). That deferential review accords "greater weight and finality . . . to the Commission's findings as compared with those of a trial court." *Id.* This Court defers to the Commission's interpretation of its statute (Section 337) under *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). *Suprema, Inc. v. Int'l Trade Comm'n*, 796 F.3d 1338, 1346 (Fed. Cir. 2015) (en banc). Where "Congress has directly spoken to the precise question at issue," the Court gives "effect to Congress' unambiguous intent." *Id.* Where the statute is silent or ambiguous, "the Commission's interpretation of Section 337" governs so long as it is "reasonable." *Id.* at 1349.

I. The Commission Acted Within Its Statutory Authority and Reasonably Determined That Panduit's and Siemon's Imported Modules Are "Articles That . . . Infringe"

A. Induced Infringement Using Imported Articles Violates Section 337's Bar on "Importation" of "Articles That . . . Infringe"

This Court has repeatedly upheld the Commission's authority to enforce Section 337 against imported articles where the importer, after the time of importation, uses those articles to induce infringement of a U.S. patent. *See Suprema*, 796 F.3d at 1349; *Comcast Corp. v. Int'l Trade Comm'n*, 951 F.3d 1301, 1308 (Fed. Cir. 2020). In *Suprema*, this Court upheld the Commission's finding of a Section 337 violation through the importation of scanners that directly infringed only after being combined with domestically made software. *See* 796 F.3d at 1342-43. In *Comcast*, this Court similarly upheld a finding of violation through

the importation of set-top boxes that directly infringed only when used with domestic servers. *See* 951 F.3d at 1305, 1307-08. Both cases turned on the Commission's discretion under *Chevron* to resolve ambiguity in Section 337.

Section 337 declares "unlawful" the "importation into the United States," and certain sales, "of articles that . . . infringe a valid and enforceable United States patent." 19 U.S.C. § 1337(a)(1)(B)(i). Applying *Chevron*'s first step, *Suprema* held that the "phrase 'articles that infringe' does not unambiguously exclude inducement of post-importation infringement." 796 F.3d at 1346. Applying *Chevron*'s second step, *Suprema* upheld as reasonable the Commission's conclusion that "[i]nduced infringement is one kind of infringement, and when it is accomplished by supplying an article, the article supplied can be an 'article that infringes' if the other requirements of inducement are met." *Id.* at 1349. *Suprema* relied on "Congressional intent to vest the Commission with broad enforcement authority to remedy unfair trade acts," *id.* at 1350, and the need to avoid "circumvent[ion]" of "Section 337" through the importation of "articles in a state requiring post-importation combination or modification before direct infringement could be shown," *id.* at 1352.

Comcast reaffirmed *Suprema*'s holding, rejecting a request that "*Suprema* . . . be limited to its facts." 951 F.3d at 1308. It explained that, under *Suprema*, "Section 337 applies to articles that infringe after importation" and affirmed the

Commission's determination that this requirement was met where a respondent "designed" articles "to be used in an infringing manner, . . . directed their manufacture overseas," and then "directed the[ir] importation to [its] facilities in the United States." *Id.* (quoting Commission). Although *Suprema* dealt with a method claim, *see* 796 F.3d at 1346, *Comcast* applied *Suprema* to an apparatus claim, *see* 951 F.3d at 1304, like the Asserted Claims.

Here, the Commission reasonably exercised its "broad enforcement authority," *Suprema*, 796 F.3d at 1350, to find that Panduit's and Siemon's importation of modules violates Section 337.[4] The Commission found that, as in *Comcast*, Panduit and Siemon designed their modules for uses that infringe the Asserted Claims of the '320, '456, and '153 patents, by being combined with chassis, Appx47-48; imported the modules into the United States, Appx22-23; and then instructed and encouraged their customers to combine their modules with their chassis and infringe the patents, Appx45-46. Section 337 requires no more.

B. The Record Supports the Commission's Inducement Findings

The Commission's findings are amply supported by the record. It is not contested on appeal that Panduit's and Siemon's products infringe the '320, '456,

[4] Corning does not discuss the Commission's importation and inducement findings as to FS because FS does not challenge them. *See* Appellants' Br. 27-43 (raising arguments only as to Panduit and Siemon).

and ’153 patents when each Appellant’s modules are combined with that Appellant’s chassis. The ALJ found infringement of all three patents by Panduit and by Siemon. Appx203, Appx316, Appx371-372. The Commission affirmed the ALJ’s findings as to all three patents, with modifications not relevant here. Appx23-32, Appx45-48. As support for its infringement determinations, the Commission found that Panduit and Siemon designed their modules and chassis to be combined to meet the demands of their data center customers for high fiber density, Appx47-48, and instructed their customers to do so, *see* Appx46-48, Appx208-209, Appx213-214.

Panduit’s and Siemon’s designs and instructions were circumstantial evidence showing that Panduit’s and Siemon’s customers did combine the chassis and modules. *See C.R. Bard Inc. v. AngioDynamics, Inc.*, 979 F.3d 1372, 1379 (Fed. Cir. 2020) (“where an alleged infringer designs a product for use in an infringing way and instructs users to use the product in an infringing way,” that is “circumstantial evidence” of at least one infringing use). The designs and instructions were also evidence that Panduit and Siemon intended their modules to be used to infringe. *See Ricoh Co. v. Quanta Comput. Inc.*, 550 F.3d 1325, 1341-43 (Fed. Cir. 2008) (per curiam) (discussing *MGM Studios Inc. v. Grokster, Ltd.*,

545 U.S. 913 (2005), and the role of advertising and design evidence in proving intent to induce).[5]

1. The record supports the findings as to Panduit

Record evidence of Panduit's infringing design intent includes Panduit's internal engineering documents that showed that Panduit designed its modules and chassis not merely to be used together, *see* Appx30106-30110, but also to match the groundbreaking density of Corning's EDGE (144 connections per U space). For example, Panduit was concerned that "Corning's new high density 4RU enclosure/system is a threat to Panduit's fiber business." Appx48; *see* Appx29973, Appx29975. Panduit's "Project Charter" stated a goal "to achieve a density of 576 fibers," which equates to 144 fibers for each 1RU. Appx48; *see* Appx28133 (citing Appx29498). Panduit also admitted that its "[l]ack of super high density (>48 ports/RU)" was one factor that "led customers to search for alternate suppliers . . . (read: Corning)." Appx48; *see* Appx29577.

In addition, the record also shows that, to develop its new product and match EDGE, Panduit's engineers acquired samples of Corning's EDGE products, reviewed patents that described EDGE, and made their own 3-D models of EDGE modules to see how they interacted with the EDGE chassis. *See* Appx276;

[5] The inference recognized in *Grokster* and *Ricoh* requires that the inducer knew of the patents. That is established here. *See* Appx45; Appx207; Appx213.

Appx48; Appx151621-151622; Appx151632-151634. The Commission could reasonably infer that Panduit only went to such lengths to give its customers the benefits of EDGE's patented features – the same features that the ALJ determined in affirmed, unchallenged findings were the source of EDGE's commercial success and industry praise. *See* Appx204-208.

Record evidence of Panduit encouraging, teaching, and aiding third parties to use Panduit's modules to infringe includes Panduit's user instructions, which show customers how to combine the accused modules and chassis in a way that infringes the Asserted Patents. *See*, *e.g.*, Appx84381-84387; Appx84711-84723. Panduit's promotional materials and sales efforts also encouraged users to use the Accused Combinations to infringe. *See*, *e.g.*, Appx151839-151840; Appx31063-31064; Appx133942; Appx33981-33987; Appx30106-30110 (setting out as the purpose of Panduit's HD Flex products the combination of the HD Flex Modules in the HD Flex Chassis); Appx84724-84725; Appx30119-30123. Corning's expert, Dr. Paul Prucnal, also testified that customers learn to assemble the chassis and modules in infringing combinations from Appellants' product literature and instructions. Appx151370.

2. The record supports the findings as to Siemon

Record evidence of Siemon's infringing design intent includes Siemon's launch presentation for its product, which shows that its modules were designed to

be combined with a chassis in an infringing manner, and which describes no non-infringing product uses. Appx30727-30760; *see also* Appx31503-31532. The evidence shows Siemon "was aware of Corning's protection of its intellectual property, had samples of Corning's products, and possibly copied EDGE." Appx213; *see* Appx133527; Appx30406-30408, Appx30424-30430; Appx133540.

Record evidence of Siemon encouraging, teaching, or otherwise aiding third parties to infringe includes Siemon's user instructions, which, like Panduit's, show customers how to combine modules and chassis to infringe. *See*, *e.g.*, Appx46; Appx85283-85288; Appx151839-151840 (testimony that Appellants advertise that their Accused Products can be combined). Siemon has instructed its users to infringe, promoted the infringing combination to its users, and actively encouraged infringing sales. *See*, *e.g.*, Appx30822-30823 (promoting accused combination and showing users how to install modules in chassis to reach 144 connections per 1U).[6] And, for Siemon as for Panduit, the Commission could rely on expert testimony that customers learn to assemble the chassis and modules in infringing combinations from Appellants' product literature and instructions, Appx151370.

[6] Appx30832-30833 (similar); Appx30807-30810 (promoting accused combination); Appx133571 (Siemon shows customers how to install modules in chassis).

C. Panduit and Siemon Fail To Show Error in the Commission's Interpretation or Application of Section 337

1. Panduit and Siemon err in urging this Court to depart from *Suprema* and from *Comcast*

Panduit and Siemon make two arguments that their importation of modules is outside the Commission's Section 337 enforcement authority. *Suprema* and *Comcast* foreclose both.

First, Panduit erroneously argues (at 28) that its modules "are not 'articles that infringe'" because the ALJ found that the modules themselves do not infringe the Asserted Claims of the '206 patent, which "are specifically directed toward modules." This argument is foreclosed by *Suprema*'s holding that, when "[i]nduced infringement . . . is accomplished by supplying an article, the article supplied can be an 'article that infringes' if the other requirements of inducement are met." 796 F.3d at 1349; *see Comcast*, 951 F.3d at 1308. The record here showed that Panduit induced infringement by supplying its customers with modules that it had designed and imported for infringing use, and by teaching them to use the modules in just that way. *See supra* p. 24.

Panduit's argument that its modules cannot be "articles that . . . infringe" because they do not themselves, standing alone, infringe the '206 patent, effectively asks this Court to overrule *Suprema* and *Comcast*. That is not an appropriate request to a panel of this Court. *See*, *e.g.*, *Tex. Am. Oil Corp. v. U.S.*

Dep't of Energy, 44 F.3d 1557, 1561 (Fed. Cir. 1995) (en banc) ("This court applies the rule that earlier decisions prevail unless overruled by the court *en banc*, or by other controlling authority such as intervening statutory change or Supreme Court decision."). There is no new controlling authority here.

Second, Panduit and Siemon fail (at 31-32 & n.8) to distinguish *Suprema* and *Comcast* on the ground that *Suprema* involved "method claim[s]" and the Asserted Claims are "apparatus claim[s]." As they acknowledge (at 32 n.8), that distinction fails for *Comcast*, which involved apparatus claims. It is no more appropriate to ask a panel of this Court to overrule a prior panel's decision than to seek overruling of an en banc decision. *See*, *e.g.*, *Metzinger v. Dep't of Veterans Affs.*, 20 F.4th 778, 781 (Fed. Cir. 2021) ("[W]e are bound by prior panel decisions of this court unless and until overturned en banc."). And Panduit's and Siemon's footnoted criticism of *Comcast* (at 32 n.8) as a "very short discussion" that "did not address the difference between method and apparatus claims" shows that they are merely arguing that *Comcast* was wrongly decided.

Even if the purported distinction between method and apparatus claims were an open question (which it is not), it should not matter. The ambiguity *Suprema* identified in Section 337 is that "the phrase 'articles that infringe' does not map onto the Patent Act's definition of infringement." 796 F.3d at 1346. That is because "[t]he relevant portions of § 271 define persons' *actions* as infringement,"

and so "[a]n 'article' cannot infringe under any subsection of § 271." *Id.* at 1347. That is as true for apparatus claims as for method claims: an article sitting by itself cannot infringe either. Regardless of the type of claim, the person who induces infringement is the person who "suppl[ies] an article" to another where "the other requirements of inducement are met." *Id.* at 1349.

Nor are the factors that *Suprema* cited as making the Commission's resolution of that ambiguity reasonable, *see id.* at 1349-52, different for apparatus claims as opposed to method claims. It is just as true for apparatus claims that "acts necessary for induced infringement, including acts of direct infringement, may not occur simultaneously at the time of importation." *Id.* at 1349. Here, direct infringement by Appellants' customers of the '320, '456, and '153 patents occurs when they place one or two modules in the chassis, *see* Appx33 & n.19, just as direct infringement occurred in *Suprema* when software was installed on the imported scanners, *see* 796 F.3d at 1341-42. It is as true for apparatus claims as for method claims that Congress gave the Commission broad authority to prevent unfair trade practices, *see id.* at 1350; that the Commission has consistently used that authority, *see id.* at 1350-51; that this Court has upheld that authority, *see id.* at 1351-52;[7] and that a narrower "technical interpretation" of the statute would invite

[7] Indeed, *Suprema* itself observed that this Court had previously approved the Commission's finding of a "Section 337 violation based on induced

"foreign entities . . . to circumvent Section 337," *id.* at 1352. The distinction Panduit and Siemon seek to draw makes no difference relevant to *Suprema*'s or to *Comcast*'s reasoning.

Third, Panduit and Siemon err in contending (at 30-31) that "Sections 271(a) and Section 271(c) are the only statutes that are squarely directed to the making, using, or selling of imported *articles* that might infringe a patent, as opposed to *actors*, as in the induced infringement statute, Section 271(b)." As *Suprema* explained, there is no relevant difference. It is "persons' actions" – not things – that violate each "relevant portion[] of § 271." 796 F.3d at 1347 (emphasis omitted).[8] In any event, that incorrect textual contrast between subsections (a), (b), and (c) has nothing to do with any supposed distinction between method and apparatus claims. A similar argument could have been – indeed, was – made to the en banc Court in *Suprema*.[9] So Panduit and Siemon are again merely saying that

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infringement of [an] apparatus claim." 796 F.3d at 1352 (citing *Emcore Corp. v. Int'l Trade Comm'n*, 449 F. App'x 918 (Fed. Cir. 2011)).

[8] Specifically, making, using, offering, selling, or importing a patented invention violates § 271(a); inducing infringement violates § 271(b); and offering, selling, or importing certain components of patented inventions violates § 271(c).

[9] *See* Br. of Amici Dell Inc. et al. at 12-13, No. 12-1170, 2014 WL 4312226 (Fed. Cir. Aug. 18, 2014) (arguing that "[t]he relevant definition of infringement" for purposes of Section 337 "is found in § 271(a)" and that "Section[] 271(b) . . . do[es] not expand the definition of infringement – *i.e.*, [does] not define additional exclusive rights – but instead extend[s] liability to certain persons").

Suprema should have come out differently – an argument this Court, sitting as a panel, should not entertain.

Even if Appellants' misplaced criticisms of *Suprema* and *Comcast* were before this Court en banc (which they are not), this case would present no occasion to revisit those precedents. This is not the situation feared by the *Suprema* dissent in which the Commission has "h[e]ld up staple goods" based on a mere "perception" that those goods "*could be* used to infringe a method claim." 796 F.3d at 1368-69 (O'Malley, J., dissenting). The Commission instead found that, for "Panduit and Siemon," infringing use was "the primary driver in developing and marketing the accused products" and the "most common application in data centers." Appx47. That desire to appropriate the benefits of Corning's innovation is why Panduit and Siemon based their modules on Corning's, instructed their customers to infringe, and sold more than 100,000 modules in the United States from January 2018 to July 2020. Appx45-48. That large volume of importation driven primarily by infringing use falls in the heartland of the Commission's Section 337 enforcement authority.

2. Panduit and Siemon fail to show error in the Commission's rejection of their "nexus" arguments

a. Panduit and Siemon also err in contending that the Commission failed to require a sufficient "nexus" between the modules and the Asserted Claims. The

Commission's interpretation and application of its statute is reasonable and entitled to deference under the *Chevron* framework.

As *Suprema* explains, the first step in analyzing the Commission's application of Section 337 asks "whether Congress has directly spoken to the precise question at issue." 796 F.3d at 1346 (quoting *Chevron*, 467 U.S. at 842). Congress did not directly require a nexus in Section 337. The statute contains no such language, and Panduit and Siemon do not argue otherwise. Nor do they argue that any decision of the Supreme Court or this Court has ever held that Section 337 clearly requires a nexus. Any nexus test would be one that the Commission chose to create with "gap-filling authority," *id.* at 1352, not one imposed by Congress. *See City of Arlington v. FCC*, 569 U.S. 290, 296 (2013) (explaining that *Chevron* deference rests on a "background presumption" that "'Congress, when it le[aves] ambiguity in a statute' administered by an agency, . . . 'desire[s] the agency (rather than the courts) to possess whatever degree of discretion the ambiguity allows'") (quoting *Smiley v. Citibank (S.D.), N.A.*, 517 U.S. 735, 740-41 (1996)).

The second step asks whether "the Commission's interpretation of Section 337 is reasonable," recalling that a "reasonable construction of the statute" need not be "the only possible interpretation or even the one a court might think best." *Suprema*, 796 F.3d at 1349 (quoting *Holder v. Martinez Gutierrez*, 566 U.S. 583, 591 (2012)). The Commission reasonably found a "nexus" requirement

unnecessary to determine whether the imported articles – non-appealing respondent Leviton's chassis, and Panduit's and Siemon's modules – met Section 337's requirement of an "importation into the United States." Appx22. Instead, it "address[ed]" Panduit's and Siemon's arguments "in connection with" its analysis of "infringement." Appx22.

In that analysis, Appx26-32, the Commission found the facts of this case closely on point with *Suprema* and *Comcast*, as well as its own recent decision in *Certain Digital Video Receivers and Related Hardware and Software Components*, Inv. No. 337-TA-1103, 2019 WL 2953269, Comm'n Op. (June 4, 2019) ("*Digital Video Receivers II*"). *See* Appx29 ("In this case, the imported articles are components of the accused apparatuses similar to the set-top boxes at issue in *Comcast* and *Digital Video Receivers II*. Respondents' attempts to distinguish these authorities are without merit."). As shown above, the Commission was correct. Even now, Panduit and Siemon offer only unpersuasive distinctions with *Suprema* and *Comcast* and pleas to overrule them.

Like any administrative agency with the authority to adjudicate, the Commission has discretion to develop the law of Section 337 case-by-case. *See Nat'l Org. of Veterans' Advocs., Inc. v. Sec'y of Veterans Affs.*, 927 F.3d 1263, 1269-70 (Fed. Cir. 2019) ("The decision 'between proceeding by general rule or by individual, ad hoc litigation is one that lies primarily in the informed discretion of

the administrative agency.'") (quoting *SEC v. Chenery Corp.*, 332 U.S. 194, 203 (1947)). A corollary is that, where a particular case is much like other cases the agency has already decided, there is little need to develop the law. The Commission reasonably took that approach here.

Further, the Commission also addressed (and reasonably rejected) Panduit's and Siemon's arguments that their imported modules were required to be "'primary' or 'quintessential'" parts of the apparatus, finding that neither this Court's precedent nor its own supported such a requirement. Appx30. It rejected their arguments that the '320 patent does not claim modules, observing that the specification discusses modules at length and that "[t]here is no dispute that it is the combination of module(s) and chassis that infringes the asserted claims of the '320, '456, and '153 patents." Appx31. And it rejected their attempt to limit *Suprema* and *Comcast* to "circumstances where intent can be ascertained based on the imported article," observing that this argument relied on the *Suprema* dissent and was inconsistent with the majority's reasoning, as well as with *Digital Video Receivers II*. Appx31-32. The Commission's opinion was thorough, well-reasoned, and gave Panduit and Siemon a fair hearing.

b. Panduit and Siemon fail to show that the Commission acted unreasonably in its failure to apply a nexus requirement. *First*, they erroneously argue (at 36-37) that the Commission "failed to 'offer[] a reasoned explanation'"

for its decision not to apply a nexus requirement and that it had done so in early "precedents . . . beginning in 1978."[10] Panduit and Siemon do not themselves cite any of those precedents or compare them to the present case. Instead, they rely on the Additional Views of Chair Kearns and on a brief filed by the Commission's Staff. But Chair Kearns found no need to adopt a "framework" to address imported components because it "would likely delay completion of this investigation without changing the result or the remedy," framing his views as "guidance" for the future. Appx98. He joined the Commission's decision to resolve this case under *Suprema*, *Comcast*, and *Digital Video Receivers II*.

Nor do the authorities in the Staff's brief call for a different result. For example, the 1978 decision to which Panduit and Siemon refer – but which they do not cite – is *Certain Welded Stainless Steel Pipe and Tube*, Inv. No. 337-TA-29, 1978 WL 50692, Comm'n Op. (Feb. 22, 1978). As the Staff advised, that decision involved "unfair pricing rather than patent infringement," and it "was based on an earlier version of the statute." Appx25118 n.1. The earlier version of the statute

[10] Panduit and Siemon incorrectly state (at 36) that "the Commission" cited those precedents and "the Commission noted that . . . 'a nexus must exist for there to be a violation of Section 337.'" (Emphasis omitted.) The quoted language is from the Commission's Office of Unfair Import Investigations ("Staff"), Appx25117-25118, which acts as an independent party in some investigations but does not speak for the Commission. Panduit and Siemon also incorrectly identify (at 37 n.9) the Staff as "[t]he Court."

with which the Commission dealt in that case did not even use the phrase "articles that . . . infringe." *See* 19 U.S.C. § 1337(a) (1976). *Stainless Steel Pipe* has little relevance to the statutory and policy questions in *Suprema*, *Comcast*, *Digital Video Receivers II*, and this case. That explains why neither Panduit nor Siemon cited it to the Commission in their petition for review, Appx22879-22967, or in their response to the Commission's request for briefing, Appx24462-24513.

As another example, the Chair's Additional Views and the Staff's brief cite *Certain Cardiac Pacemakers and Components Thereof*, Inv. No. 337-TA-162, 1984 WL 273827, Order No. 37 (Mar. 21, 1984); *see* Appx101; Appx25118. *Cardiac Pacemakers* was an administrative law judge's order, not Commission precedent. It involved patents and endorsed a nexus requirement, citing *Stainless Steel Pipe*. *Cardiac Pacemakers*, 1984 WL 273827, at *2 & n.1. But it did not involve evidence of induced infringement, *see id.* at *2, and, like *Stainless Steel Pipe*, it applied an older version of the statute that did not use the phrase "articles that . . . infringe." 19 U.S.C. § 1337(a) (1982). Panduit and Siemon also did not cite *Cardiac Pacemakers* to the Commission, just as they have not cited it to this Court. Appx22879-22967; Appx24462-24513. The Commission was not required to discuss obviously distinguishable precedent.[11]

[11] Chair Kearns and the Staff also cited other Commission and administrative law judge decisions, but without substantial discussion. Neither argued that any of those cases compelled a nexus requirement here. Appx101-102;

Second, Panduit and Siemon misleadingly state (at 37) that "the Commission contemplated enforcing [a nexus] test here, but chose not to." The Commission requested briefing on whether it should consider a "nexus" in cases "when the *respondent-importer* uses the imported article *to directly infringe* the asserted patent claim after importation." Appx24087 (emphases added). The Commission did not suggest that it should apply a nexus test to induced-infringement cases. Its request for briefing is fully consistent with its decision to rely only on inducement findings against Panduit and Siemon, without relying on direct infringement by either, Appx24087-24089 – and without adding a nexus test on top of *Suprema*, *Comcast*, and *Digital Video Receivers II.*[12]

c. Panduit and Siemon also err in contending that a nexus analysis would have shown a lack of connection between their imported modules and their unfair acts. To the contrary, the Commission's findings amply showed that connection, including Panduit's and Siemon's deliberate design of their modules to obtain the benefits of Corning's patented inventions, Appx47; their marketing of their

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Appx25118. Nor did Panduit and Siemon so argue in their own submissions. Appx22879-22967; Appx24462-24513.

[12] Panduit and Siemon also misleadingly present Corning's own position before the Commission. Although Corning generally argued that the Commission should apply a nexus text and find a nexus present, Corning also argued that "[i]t would be within the Commission's authority to hold that, in induced infringement cases, the inducement itself supplies any necessary connection between the importation and the infringement." Appx24943 n.2.

chassis-and-module systems as achieving the same density as Corning EDGE, Appx46-47; and their instructions to customers to insert modules in chassis, Appx47-48. Panduit's and Siemon's complaint that the Commission failed to take the further step – which neither the statute nor any binding authority required – of sticking a "nexus" label to those facts is a matter of form, not substance. Each of their two contrary arguments lacks force.

First, Panduit and Siemon incorrectly criticize the Commission (at 38) for supposedly "suggest[ing]" that "the '320 patent . . . require[s] a module." To the contrary, as the Commission explained, the specification repeatedly describes modules as the "fiber optic connection equipment provided in the chassis," an element of claim 1. Appx31; *see* Appx600-601 (2:66-3:3). To be sure, the '320 patent theoretically reads on other embodiments. But the preferred embodiment uses modules as the claimed "fiber optic equipment." Not only that, Corning uses modules in EDGE, Appx15; Panduit and Siemon use modules in their infringing devices, Appx31, and all other respondents use modules as well, Appx13-15; Appx28-29. The theoretical possibility that someone could infringe without modules does not undermine the reality that modules are in practice a crucial part

of all embodiments that matter. It is also undisputed that modules are claimed in the '456 and '153 patents. *See* Appellants' Br. 40-41.[13]

Second, Panduit and Siemon inaccurately assert (at 41) that the Commission's finding that their modules have "substantial non-infringing uses" somehow proves lack of nexus. A component with non-infringing uses can be used to induce. *See Golden Blount, Inc. v. Robert H. Peterson Co.*, 438 F.3d 1354, 1363 (Fed. Cir. 2006) (explaining that "it matters not that the assembled device can be manipulated into a non-infringing configuration" where "the instructions packaged with each device teach the infringing configuration"). Panduit and Siemon also do not challenge the Commission's finding that infringing uses were the "primary driver" of their "develop[ment] and marketing [of] the accused products." Appx47. Any non-infringing uses were secondary to infringing ones as a matter of commercial reality.

[13] Panduit and Siemon also err in stating (at 40) that "the accused *system* is not the modules themselves, but rather the chassis, trays, and other components of the enclosure that Panduit and Siemon do not import." As they admit, at least one module must be inserted in the chassis to practice the '320 patent, and at least two modules must be inserted to practice the '456 patent.

II. Substantial Evidence Supports the Commission's Finding That Appellants Failed To Show That Certain Claims of the '320 and '456 Patents Are Invalid Under the Doctrine of Enablement

The Commission correctly rejected Appellants' assertions that the '320 and '456 patents are invalid under the doctrine of enablement. Under former 35 U.S.C. § 112 ¶ 1 (2006) (now § 112(a)), a patent must describe the invention "in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same." This requires "teach[ing] those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 959 F.3d 1091, 1100 (Fed. Cir. 2020) (quoting *ALZA Corp. v. Andrx Pharms., LLC*, 603 F.3d 935, 940 (Fed. Cir. 2010)). Appellants bore the burden to show lack of enablement by clear and convincing evidence. *See Cephalon, Inc. v. Watson Pharms., Inc.*, 707 F.3d 1330, 1336 (Fed. Cir. 2013).

The challenged Asserted Claims of the '320 and '456 patents recite a density of "at least" 98 or 144 fiber optic connections per U space. Appx609 ('320 cl. 1 and 3); Appx842 ('456 cl. 11).[14] Although the claims state no express upper limit on the claimed density, such "[o]pen-ended claims are not inherently improper"

[14] Appellants concede (at 44 n.11) that their enablement challenge does not apply to claim 19 of the '456 patent, which recites a connection density of 144 connections per U space, not a range.

and may be valid "depend[ing] on the particular facts of the invention, the disclosure, and the prior art." *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1376 (Fed. Cir. 2007) (quoting *Scripps Clinic & Rsch. Found. v. Genentech, Inc.*, 927 F.2d 1565, 1572 (Fed. Cir. 1991)). Open-ended claims are enabled "if there is an inherent, albeit not precisely known, upper limit and the specification enables one of skill in the art to approach that limit." *Id.* at 1376-77.

Appellants conceded before the Commission that "[t]his legal test is not in dispute." Appx22901. The only dispute preserved for review by this Court is whether substantial evidence supports the ALJ's finding, adopted by the Commission, that Appellants "have not proven by clear and convincing evidence that" the challenged claims "do not satisfy the enablement requirement." Appx280; Appx358. This Court should uphold the ALJ's detailed analysis.

A. Substantial Evidence Supports the Finding of an Inherent Limit on the Number of Fiber Optic Connections per U Space

Corning came forward with ample evidence to show that a person of ordinary skill, familiar with the prior art at the time of the '320 and '456 patents' August 2008 priority date, would understand that there is an inherent limit on the number of fiber optic connections that fiber optic equipment can make in each U space. That evidence was set out in the testimony of Dr. Paul Prucnal, Corning's rebuttal expert on validity. *See* Appx95840-95852. The ALJ and the Commission were entitled to find Prucnal's testimony persuasive and to credit it,

as well as to draw inferences from the claims, specifications, and witness testimony that further support Corning's position.

1. The physical structure needed for fiber optic connections limits the number per U space

A person of ordinary skill would recognize from the '320 patent and from background knowledge that the '320 patent claims require physical structures that limit density. The invention's purpose, and a main focus of the specification, is to maximize the usable density of a particular type of fiber connection (that is, simplex or duplex connectors) in a particular space with industry-standard dimensions (that is, a 1.75-inch high, 19- or 23-inch wide U space). As Prucnal explained in his testimony, fibers take up space. Appx95842; Appx95850. So do connectors, adapters, and cables, as well as the chassis itself. Appx95842-95844; *see* Appx95842 ("A person of ordinary skill would not overlook that these physical structures require space and therefore that it is impossible to achieve an infinite number of fiber optic connections in a finite space.").

The claims and specification of the '320 patent support the Commission's finding that the physical structure required for dense fiber optic connections takes up space. Claim 1 of the '320 patent recites "a chassis," "fiber optic connection equipment provided in the chassis," and that the claimed density is achieved "based on using at least one simplex . . . or at least one duplex fiber optic component." Appx609 (19:53-59). The '320 specification explains that

"increasing the number of optical fiber ports can require more equipment rack space in a data center," Appx600 (1:64-65), and discusses in detail the limits imposed by space constraints. *See*, *e.g.*, Appx600 (2:10-25) (listing various densities that can be achieved in a U space with given types of fiber); Appx609 (table showing "Max Fibers per 1RU" and "Max Fibers per 4RU" using particular types of connectors).[15]

The claims and specification of the '456 patent further support the Commission's findings. Claim 11 of the '456 patent recites structural elements beyond those in the '320 patent. Those elements include "a plurality of fiber optic equipment trays" that are "extendable relative to the chassis in the longitudinal direction"; "a plurality of fiber optic modules configured to be installed in the fiber optic equipment trays"; and the ability to install "multiple fiber optic modules" in each tray. Appx842 (21:50-66). Those recited limitations would confirm the

[15] *See also* Appx601 (4:36-42) ("certain embodiments" in which a "fiber optic equipment unit[ ]" is "configured to support a given fiber optic connection density or bandwidth in a 1-U space, and for a given fiber optic component type(s)"); Appx602 (5:38-67) (number of connections supported by certain embodiments in a U space); Appx603 (8:38-51) ("form factor" of the "fiber optic module . . . allows a high density of fiber optic components . . . to be disposed within a certain percentage area of the front of the fiber optic module"); Appx604 (10:25-46) (number of connections supported by certain other embodiments in a U space); Appx605 (11:42-12:4) (limit on number of modules per U space); Appx605 (12:40-13:21) (number of connections supported by certain other embodiments in a U space); Appx606 (14:5-34) (same); Appx607-608 (15:29-56, 16:58-17:19) (same).

understanding of a person of ordinary skill that fiber optic connections require equipment that takes up space and limits the number of connections per U (or 4U) space. The '456 specification also contains discussion of space constraints.[16]

Witnesses from both Corning and Appellants also agreed that there is a physical limit on the number of connections that can fit into a U or 4U space using simplex and duplex LC components. Relevant testimony includes that of Corning's inventor Brian Rhoney, Appx134192 ("there's a theoretical limit" to "[h]ow . . . you physically pack enough LCs to get to the next usable density space"); and Panduit's engineer Greg Kuffel, Appx133431.

2. The need for technician access to cables limits the number of connections per U space

The '320 and '456 patents focus not merely on achieving high density, but also on maximizing usable, practical density. As Prucnal explained, fiber optic connections need to be easily accessed for technicians to "maintain[ ], change[ ], and ultimately remov[e]" such connections as demand warrants. Appx95844; *see*

[16] *See also* Appx832 (1:66-2:1) ("[I]ncreasing the number of optical fiber ports can require more equipment rack space in a data center."); Appx832 (2:16-32) (describing chassis configurations); Appx834 (5:44-6:15) (describing fiber optic connections in 1U space); Appx836 (9:5-31) (interplay between fiber optic components and modules); Appx836-837 (10:49-11:16) (density of 1U chassis); Appx837 (12:15-42) (same); Appx838 (13:4-12, 14:36-64) (same); Appx839 (15:61-16:23) (same); Appx840 (17:25-53) (same); Appx842 (22:47) (same); Appx841 (table).

also Appx28645 (Rhoney testifying that "customers . . . wanted greater density but also wanted more usability than" offered by the prior art). These practical considerations impose further limits on "[t]he open-ended claims" based on "what a person skilled in the art would understand to be workable," *Ralston Purina Co. v. Far-Mar-Co*, 772 F.2d 1570, 1576 (Fed. Cir. 1985).

The '320 specification teaches the importance of manual accessibility by referring to operations performed by hand, *see*, *e.g.*, Appx602 (6:54-57) (disclosing a "lever [that] can easily be squeezed into [a] finger hook . . . by a thumb and index finger"), alongside many other "pulling," "pushing" and "releasing" operations that, in context, a person of skill would understand to be manual.[17] The '456 specification similarly refers to manual operations.[18]

Fact witnesses provided further evidence that accessibility is key to a workable product. Rhoney testified that some of Corning's earlier attempts "ultimately did not succeed because we ignored some of the other attributes like modularity and accessibility," Appx134191; Corning's inventor Harley Staber, that "ease of use, which is largely finger access," was a "required" function for EDGE,

[17] *See also* Appx602 (6:5-8, 6:13-18, 6:18-20, 6:29-30, 6:39-41, 6:41-44, 6:51-51); Appx603 (7:24-29) (discussing module specifications).

[18] Appx834 (6:43-46, 6:52-56, 6:59-63) (discussing module specifications); Appx834-835 (6:65-7:7) (discussing ways to move or remove modules); Appx835 (7:17-20, 7:49-52) (same).

Appx134282; *see also* Appx134302; and Siemon's engineer Charlie Maynard, that "market feedback" demanded the "highest amount of connectors" with "hand accessibility." Appx269; *see* Appx133529. Even Appellants' invalidity expert Dr. Dan Blumenthal agreed that "density is unlikely to drive . . . commercial success . . . unless that density is . . . accessible." Appx136877; *see* Appx283.

3. The need to protect fibers limits the number of connections per U space

Fiber optic connection equipment becomes useless if the fibers it connects are damaged or bent too tightly. Prucnal testified about the problems of "adequately protect[ing]" fibers and "ensur[ing] that . . . fibers are not bent so tightly that they are damaged or that transmission . . . becomes impaired." Appx95846; *see also* Appx152040 (explaining that "[f]iber optics requires avoiding breakage, having not too sharp a bend radius or losing a lot of light"). A person of skill would have known that problem too.

The '320 specification recognizes the need to protect fibers, teaching that it is necessary to maintain an appropriate "bend radius R in the optical fibers," Appx604 (9:61), and recommending the use of "bend-insensitive optical fiber" to mitigate (but not eliminate) radius problems, Appx609 (19:36-37). The '456 specification has similar disclosures. *See* Appx836 (10:17); Appx841 (19:60-61).

Fact witnesses similarly confirmed the need to protect fibers and avoid overbending. Engineers from Leviton and Panduit discussed "the need to protect

fibers and ensure an appropriate bend radius" to prevent breakage and loss of light. Appx284; *see* Appx133413; Appx133324-133325; Appx151630; Appx151635. Taking that testimony with the rest of the record, the Commission and ALJ could find that Prucnal reliably identified factors pointing to an inherent upper limit on the number of fiber connections that a product such as EDGE can support per U space.

B. Substantial Evidence Supports the Finding That the '320 and '456 Patents Taught How To Approach the Upper Limit as of the Priority Date

Corning, although it did not bear the burden to prove enablement, presented evidence that the teachings of the '320 and '456 patents, embodied in the EDGE products and Appellants' infringing products, enable a person of skill to approach the inherent upper limit on fiber optic connection density in a U space using simplex or duplex connections. That includes Prucnal's testimony explaining that, despite "substantial market pressure to achieve greater accessible density, there is no evidence of any marketed product exceeding EDGE's density since the time of EDGE's invention in August 2008," Appx285; that, after reviewing EDGE, Appellants were able to "match, but . . . not exceed, its density," Appx285; and that Panduit's engineers targeted (but failed to achieve) a higher inherent upper limit in a 4U space, supporting an inference that EDGE's 576 connections approaches the actual limit, Appx285; Appx95848-95849. Rhoney, familiar with EDGE's design,

also testified that, in his opinion, EDGE comes "really close to th[e] theoretical limit with LC connectivity of 144 fiber connections in a 1U space." Appx134192. The ALJ and the Commission found Prucnal and Rhoney credible. Appx286. That credibility finding alone is fatal to Appellants' case.

C. Appellants Failed To Carry Their Burden and Show No Error in the Commission's Decision

Panduit and Siemon, which bore the burden to show lack of enablement by clear and convincing evidence, *Cephalon*, 707 F.3d at 1336, failed to meet it before the ALJ and the Commission. Their brief does not show otherwise.

1. Appellants fail to show that the Asserted Claims lack an inherent upper limit

Appellants err in contending (at 45-51) that there is no inherent upper limit on the range claims of the '320 and '456 patents. They argue (at 45) that the claims themselves "recit[e] no upper limit," but that is true by definition of any open-ended claim, and it is settled – and undisputed before the Commission, *supra* p. 40 – that "[o]pen-ended claims are not inherently improper." *Andersen*, 474 F.3d at 1376. They point (at 46) to language in the '320 and '456 specifications stating that "modifications and other embodiments" may practice the patented invention, but none of that language suggests that such modifications or embodiments could achieve unlimited density.

Further, Appellants ignore the evidence on which the Commission's findings rely, including not only Prucnal but also other Corning witnesses, such as Rhoney and Staber, and indeed several of Appellants' own witnesses, such as Kuffel and Maynard. The presence of an inherent limit on an open-ended claim against an enablement challenge turns on the "particular facts of the invention, the disclosure, and the prior art," and the finder of fact is "free to credit . . . testimony" that sheds light on these issues. *Andersen*, 474 F.3d at 1376-77. The Court's review of the Commission's findings of fact is highly deferential. *See Tandon*, 831 F.2d at 1019; *Guangdong Alison Hi-Tech Co. v. Int'l Trade Comm'n*, 936 F.3d 1353, 1365 (Fed. Cir. 2019) (rejecting a request "to reweigh the evidence, which we may not do on substantial evidence review"). Appellants cannot prevail under that deferential standard by disregarding the evidence on which the Commission relied.

2. The Commission correctly rejected Appellants' proffer of post-priority-date evidence to show lack of enablement

Appellants assert (at 45-51) that the Commission erred by not considering evidence of new technologies to show lack of enablement. They point to a new type of duplex adapter (known as MDC) that supports three times the fibers in the same form factor as the long-standing (and still) prevalent type of duplex adapter

(known as LC).[19] The MDC adapter was not known as of August 2008, the priority date for the '320 and '456 patents. Appx139691 (MDC adapters "unveiled" on February 28, 2019). Indeed, Appellants do not and cannot point to evidence in the record of any fiber optic connection equipment using an MDC adapter reaching the market before the evidentiary hearing in November 2020.

The Commission correctly ruled that the state of the art for enablement is assessed as of the priority date of the patent – here, August 2008 – and no later. It relied on *In re Hogan*, 559 F.2d 595 (C.C.P.A. 1977), in which this Court's predecessor ruled that post-priority-date evidence cannot show lack of enablement:

> [I]f appellants' 1953 application provided sufficient enablement, considering all available evidence (whenever that evidence became available) of the 1953 state of the art, i.e., of the condition of knowledge about all art-related facts existing in 1953, then the fact of that enablement was established for all time and a later change in the state of the art cannot change it.

Id. at 605. This Court reaffirmed that principle in *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247 (Fed. Cir. 2004), which held that "a patent document cannot enable technology that arises after the date of application" and that "[t]he law does not expect an applicant to disclose knowledge invented or developed after the filing date," *id.* at 1254; and in *Amgen Inc. v. Sanofi*, 872 F.3d 1367 (Fed. Cir. 2017),

[19] Appellants' arguments based on MDC adapters do not apply to claim 14 of the '456 patent, which recites the use of LC adapters. Appx842.

which explained that it is "improper" to use "post-priority-date evidence proffered to illuminate the post-priority-date state of the art," *id.* at 1374.

Appellants erroneously contend (at 51-55) that *MagSil Corp. v. Hitachi Global Storage Technologies, Inc.*, 687 F.3d 1377 (Fed. Cir. 2012), allowed the use of post-priority evidence to show lack of enablement. To the contrary, *MagSil* acknowledged that "[t]he enablement determination proceeds as of the effective filing date of the patent." *Id.* at 1380. In *MagSil*, the claims covered certain changes in electrical resistance of "at least 10%," *id.* at 1381; and, as of the priority date, the specification taught "a maximum change in resistance of only 11.8%," *id.*; but, during prosecution, the inventors recognized an "upper limit" of a "100% resistive change," *id.* at 1382, far beyond what the specification taught. To be sure, this Court also referred to even higher changes (exceeding 600%) achieved years later, which the patent-holder sought to claim, and criticized that as overreaching. *See id.* at 1384. But *MagSil* did not consider whether – and certainly did not hold that – if the patent had taught how to approach the known upper limit on resistance changes on its priority date, it would have become invalid when later advances made greater changes feasible.[20]

[20] Appellants' reliance on *Pacific Biosciences of California, Inc. v. Oxford Nanopore Technologies, Inc.*, 996 F.3d 1342 (Fed. Cir. 2021), and *Idenix Pharmaceuticals LLC v. Gilead Sciences Inc.*, 941 F.3d 1149 (Fed. Cir. 2019), is misplaced. Neither case involved post-priority-date evidence. Both turned on evidence that a person of ordinary skill, knowing the state of the art as of the

3. Even considering their post-priority-date evidence, Appellants failed to show lack of enablement

Even if later-invented adapters were relevant evidence about enablement, Panduit and Siemon failed to show that the patent does not enable their use. As Judge Taranto's opinion in *McRO* explains, a genuine enablement challenge

> routinely involve[s] concrete identification of at least some embodiment or embodiments asserted not to be enabled – including what particular products or processes are or may be within the claim, so that breadth is shown concretely and not just as an abstract possibility, and how much experimentation a skilled artisan would have to undertake to make and use those products or processes.

959 F.3d at 1100 (citing *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988)). Appellants' expert Blumenthal gave no opinion on "how much experimentation a skilled artisan would have to undertake to make," *id.*, a version of EDGE that would use later-adopted adapters. He merely asserted that, because such adapters were not disclosed in the specification, it does not teach their use. Appx136347; Appx136349. Those conclusory statements do not meet Appellants' burden.

More generally, the '320 patent does not claim particular types of adapters, but merely recites simplex and duplex components. It teaches and claims certain

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priority date, could not have practiced the full scope of the challenged claims without undue experimentation. *See Pac. Biosciences*, 996 F.3d at 1352 (describing evidence that the patentee itself "had never performed the claimed methods"); *Idenix*, 941 F.3d at 1163 (concluding that practicing the full scope of the claims would have required "synthesi[s] and screening" of "many, many thousands of candidate compounds").

aspects of a system that achieves unprecedented density combined with accessibility and fiber protection. *See* Appx28270-28272. Panduit presented no evidence that it would require undue experimentation to modify the system taught in the Asserted Patents' specifications to use new MDC adapters instead of the LC and MPO adapters expressly disclosed.

Panduit and Siemon also failed to come forward with any "concrete identification," *McRO*, 959 F.3d at 1100, of a product that is not enabled because it uses later-invented adapters. The Accused Products do not – they use LC adapters to achieve exactly the 144 connections per U space that the '320 specification teaches. Panduit's expert asserted that "the use of MDC adapters would allow a person of ordinary skill in the art to achieve up to 432 fiber optic connections per 1RU space using simplex or duplex adapters," Appx136347, Appx136349, but gave no opinion about how much experimentation would be required to achieve a 432-fiber result, and whether such experimentation would be "undue" under the multi-part standard of *Wands*. Mere "'conclusory statements' regarding the amount of experimentation necessary" are insufficient to carry the "burden of

establishing lack of enablement by clear and convincing evidence." *Takeda Pharm. Co. v. Zydus Pharms. USA, Inc.*, 743 F.3d 1359, 1369 (Fed. Cir. 2014).[21]

Finally, Appellants incorrectly contend (at 49) that Corning's evidence on the economic prong of the domestic industry requirement involved a "representation" that equipment with MDC adapters practiced the '320 and '456 patents. Corning did not make any such representation, Appx151241-151242, but took no position on the issue. Nor did the Commission make any such finding. Rather, Corning presented alternative calculations of domestic industry figures: (1) a larger calculation including investment in a broad set of EDGE products and EDGE-related services that went beyond products that Corning affirmatively contended practiced the patents; and (2) a smaller calculation that used a sales-based allocation to identify investment in a narrower set of products and services, focused specifically on products that Corning affirmatively contended practiced the patents. The Commission accepted Corning's sales-based allocation, rejecting Appellants' challenges. Appx61-70. The domestic industry figures that the Commission accepted reasonably estimated investment in those products that Corning affirmatively contended practiced the patents.

[21] Appellants err in contending (at 56) that "[t]he example of using MDC-adapters . . . *was* [the] 'concrete' . . . embodiment" required by *McRO*. MDC adapters themselves do not even arguably embody the challenged claims.

III. Substantial Evidence Supports the Commission's Findings That Panduit and Siemon Failed To Establish a Prosecution History Disclaimer as to the '153 Patent

Substantial evidence supports the Commission's finding that Panduit's and Siemon's products include the "fiber optic routing element" recited by claim 23 of the '153 patent. The full claim term recites "a front end with at least one fiber routing element that comprises successive material sections extending frontward, upward, and rearward, respectively"; the parties agreed to construe that term as "a front end of the fiber optic equipment tray having at least one flange comprising successive sections extending frontward, upward, and rearward that guides optical fibers to either the left or the right." Appx369; Appx139731-139732.

The record supports the finding that the Panduit and Siemon products have a "fiber routing element" under the agreed construction. Corning's expert testified that Panduit's and Siemon's products meet each element of the agreed construction. Appx28387-28389. The ALJ, who had before him not only the expert testimony but also physical exhibits of Panduit's and Siemon's products, found that the claim requirements were met, Appx380-393, and had ample basis to do so. The Commission "affirm[ed] with supplemental analysis" the ALJ's finding that Panduit and Siemon had induced their customers to infringe the '153 patent. Appx45. Its supplemental analysis, Appx45-48, did not disturb the ALJ's finding on the "fiber optic routing element" issue; thus, the ALJ's finding became the

Commission's own. *See* Appx17 ("The Commission affirms and adopts the ID's findings, conclusions, and supporting analysis that are not inconsistent with the Commission's opinion.").

Panduit and Siemon argue (at 57) that "only routing elements extending from the front of the tray" (emphasis omitted) – that is, past the front of the tray – satisfy the claim requirements. The text of the claim, however, requires only that the element extend "frontward," not that it extend past the front of the tray. Panduit and Siemon assert (at 57), however, that a requirement that the element extend past the front of the tray can be found in the prosecution history. That assertion finds no support in the prosecution history.

To "surrender . . . claim scope" during prosecution, a patentee must make a "clear and unmistakable disavowal in the prosecution history." *Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1324 (Fed. Cir. 2009). Here, the history on which Panduit and Siemon rely (the "drawings" they describe at 57) appears at Appx110106-110107, and shows that Corning distinguished a prior art reference (referred to as Hawkins) by stating that Hawkins' relevant feature had "an arc-shaped uniform cross-section that curves to one side." Corning did not distinguish Hawkins on the ground that its feature did not extend past the front of its tray. Further, the terms that Corning then added to its claim ("successive" and "respectively," *see* Appx110106), do not require that the claimed element extend

past the front of the tray. Accordingly, Corning made no clear and unmistakable disavowal of scope that would include such features.

Panduit and Siemon inaccurately state (at 58) that the "ID f[ound] that the prosecution history required the specific configuration at the crux of Panduit's non-infringement argument" yet "failed to consider the non-infringement argument itself." The ALJ nowhere found that Corning had limited the scope of its claims to elements extending past the front of the tray. Instead, after quoting respondents' prosecution disclaimer argument, Appx383-384, the ALJ cited and discussed the portion of the prosecution history in which Corning had addressed Hawkins, Appx389-390, and concluded:

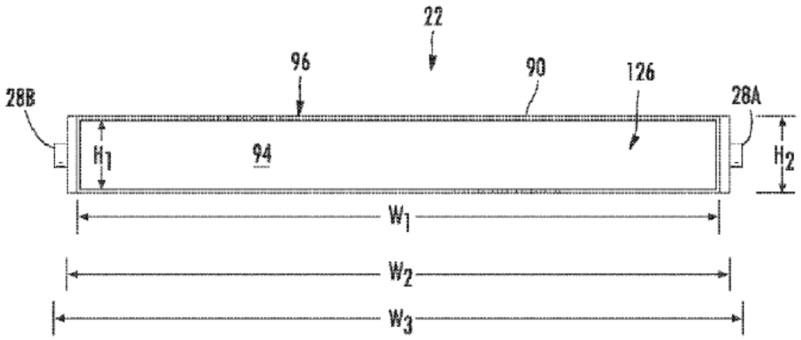
> [T]he only way Corning narrowed the fiber routing element was by adding the words "successive" and "respectively" and traversing the Hawkins '144 "orientation" or shape as failing to have successive frontward, upward, and rearward sections. That falls short of the "clear and unmistakable disavowal of scope during prosecution," *Purdue Pharma L.P. v. Endo Pharms. Inc.*, 438 F.3d 1123, 1136 (Fed Cir. 2006), required by the doctrine of prosecution history disclaimer.

Appx390. That ruling disposed of Panduit's and Siemon's argument. Having correctly rejected the contention that the Asserted Claims required an element extending past the front of the tray, the ALJ (and the Commission in affirming his ruling) had no need to address the contention that the Panduit's and Siemon's elements did not so extend.

IV. Substantial Evidence Supports the Commission's Construction of Claim 14 of the '206 Patent To Include a Module with "a Front Opening" That Includes Dividers or Spacers

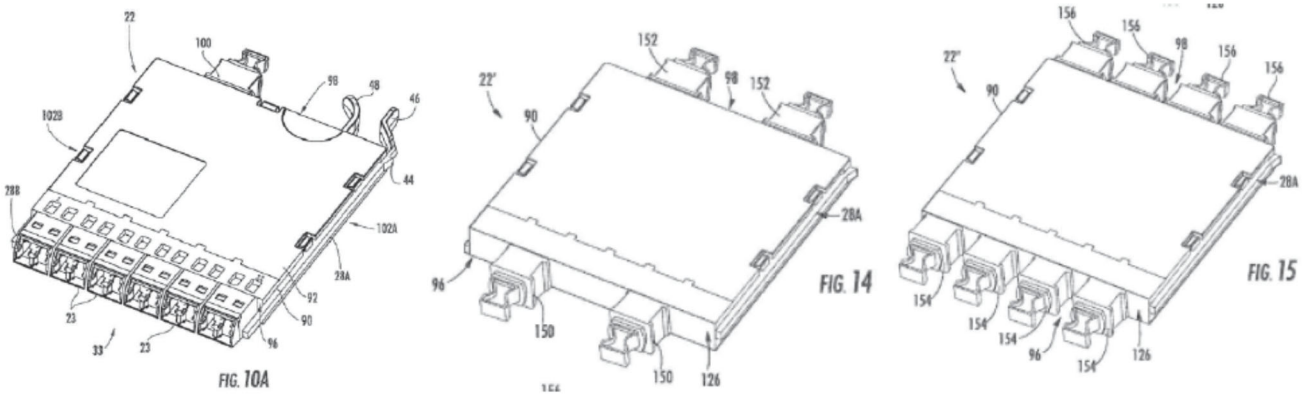
Substantial evidence supports the Commission's construction of the term "a front opening" in claim 14 of the '206 patent as "an opening located in the front side of a fiber optic module, *e.g.*, the opening depicted in Figure 13 of the '206 patent as having dimensions H_1 and W_1."[22] The Commission properly rejected Siemon's and FS's proposed limitation of "opening" to mean only a "single opening," and to exclude openings with "dividers or spacers."

The claim language that recites "a front opening" neither includes the word "single" nor excludes openings with dividers or spacers. Appx660. The specification shows that some modules with dividers or spacers embody the claimed invention. The Commission found, Appx54-55, and Siemon and FS do not now dispute, that Figure 13 of the '206 patent shows the claimed "front opening":



[22] Claim 14 is not an Asserted Claim of the '206 patent, but its limitations are relevant because they are incorporated in Asserted Claims 22 and 23.

Appx639; *see* Appx655 (9:64-10:2) (explaining that Figure 13 "illustrate[s] the form factor of the fiber optic module 22," which has a "front opening 126"). The specification further explains that the modules in Figures 10A, 14, and 15, shown below, also show the same "fiber optic module 22" as in Figure 13, and that Figures 14 and 15 have the same "form factor" as the one in Figure 13. *See* Appx654 (8:20-21); Appx656 (11:54-59, 12:54-58).



Appx634; Appx640. As the Commission found, the modules in Figures 14 and 15 show structural material separating the adapters (two MPO adapters in Figure 14 and four in Figure 15) as part of the front opening. Appx57.[23]

In reaching that conclusion, the Commission credited the testimony of Corning's expert Prucnal, "who opined that '[f]rom the drawing in Figure 15, a person of ordinary skill would understand . . . that the spaces between the adapters

[23] Figure 10A shows six LC adapters where the spacing cannot easily be seen, but, as the Commission found, "this does not mean that there are no spacers (or dividers) between the six LC adapters." Appx57.

are filled with material that is necessary to support them and to maintain the structural integrity of the module." Appx57 (quoting Appx98524); *see also* Appx56312 (Corning design drawings showing that LC-adapter modules contain spacers between the LC adapters). It further observed that "Respondents," including Siemon and FS, had no contrary evidence but "rel[ied] on only attorney argument." Appx57.

Although the ultimate construction of a patent term is a question of law, that determination may turn on "factual underpinnings" such as the understanding of a person of skill. *See Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331 (2015). The Commission's finding that Corning's expert credibly explained that a person of skill would understand the need for supporting structural material in Figure 15 is a determination of fact that warrants deference from this Court. *See Guangdong Alison*, 936 F.3d at 1365. Siemon and FS, who merely assert (at 63-64) that the Commission misread the figures and who address neither its factual findings nor the evidence that supported them, fail to overcome that deference.

Siemon and FS erroneously contend (at 61-64) that the presence of spacers or dividers – which both Corning's and their own modules have, Appx28518; Appx28360; Appx34336 – creates "multiple openings," and so such modules cannot practice claim 14 or its dependent claims. The textual basis for their contention is claim 14's use of the word "a" in the phrase "a front opening." The

word "a" will not bear the weight Appellants place on it. *See 01 Communique Lab'y, Inc. v. LogMeIn, Inc.*, 687 F.3d 1292, 1297 (Fed. Cir. 2012) (describing as "well-established precedent" the "general rule[that] the words 'a' or 'an' in a patent claim carry the meaning of 'one or more,'" and that "a patentee must evince a clear intent to limit 'a' or 'an' to 'one'") (quoting *TiVo, Inc. v. EchoStar Commc'ns Corp.*, 516 F.3d 1290, 1303 (Fed. Cir. 2008), and *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1342 (Fed. Cir. 2008)). Accordingly, it is irrelevant whether the presence of spacers or dividers makes one opening or multiple openings – Siemon's and FS's modules infringe either way.

Siemon and FS acknowledge that rule (at 61), but argue that the necessary clarity is supplied by "the doctrine of claim differentiation." *See*, *e.g.*, *Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1381 (Fed. Cir. 2006). They point to other, unasserted claims of the '206 patent that use the phrase "multiple openings" and assert that this shows that the phrase "a front opening" must mean only a single opening. As Corning pointed out before the Commission, and the Commission agreed, Appx57-58, that reasoning is incorrect. One can read the phrase "a front opening" in claim 14 to mean "one or more openings" while giving the phrase "multiple openings" in other claims its natural meaning of "more than one opening." "One or more" and "more than one" are not the same. Thus,

the Commission's construction does not deprive the term "multiple" of its own meaning, and claim differentiation has no role to play.

Even if claim differentiation were implicated here (which it is not), it would not show that the Commission erred. This Court has cautioned that "[c]laim differentiation is a guide, not a rigid rule." *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991). Here, Siemon and FS seek to use that guide to overcome the "convention" that "a" means "one or more," which has "extremely limited" exceptions, *Baldwin Graphic*, 512 F.3d at 1342; to disregard the understanding of a person of skill as shown by uncontested expert evidence, *see supra* pp. 58-59; and to impose an implausibly narrow construction on claim 14 under which Corning's own EDGE modules would not practice the patent that protects them, *see* Appx35282. Siemon's and FS's labored comparison (at 62-63) of unasserted claims 41 and 63 and Figures 16 through 18, much of which was never presented to the Commission,[24] does not make the clear showing of intent that *01 Communique* and *Baldwin Graphic* require.

[24] For example, Siemon and FS argue that the '206 patent has "eight independent claims," and criticize the Commission (at 62) for only considering independent claims 14 and 63. But their own petition to the Commission cited only those two claims, with no mention of independent claim 41 or any others. Appx22915-22917.

CONCLUSION

The Commission's decision should be affirmed.

Respectfully submitted,

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FORM 19. Certificate of Compliance with Type-Volume Limitations **Form 19**
July 2020

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATIONS

Case Number: 2022-1228

Short Case Caption: Panduit Corp. v. ITC

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